IN THE CLAIMS

1. (Currently Amended) A photosensor for color measurement based on three spectral components

comprising:

~~an interference filter structure;~~

a sensor chip having at least three partial surfaces ~~of different sensitivities~~ for detecting the three spectral components ~~through said interference filter structure which precedes said sensor chip partial surfaces~~;

~~said~~ an interference filter structure of ~~containing~~ three different alternating multi-layer systems of silicon dioxide and titanium dioxide for selective transmission of incident light into ~~the~~ said different partial surfaces of the sensor chip;

said partial surfaces providing measurement values in response to said selectively transmitted incident light;

said three partial surfaces covered by different ~~interference filters~~ said multi-layer systems of said filter structure being adapted to the spectral characteristic of the human eye;

said partial surfaces being arranged so as to be distributed in a circle sector-shaped manner around a central point with passive webs located therebetween; and

each interference filter having a different overlapping transmission ~~characteristic~~ function over the wavelength of the light to be measured spectrally being adapted to the response of the human eye in such a way that the product of the base sensitivity curve of the photosensor and ~~the~~ said transmission function of the interference filter is proportional to the normal spectral ~~value~~ sensitivity curve of the human eye for one of the relevant coordinates of the color space, so that the passed spectral components generate measurement values in ~~the~~ said three partial surfaces, which measurement values can be converted into spectral color values with simple scaling relative to one another ~~in the color space~~.

2. (Original) The photosensor according to claim 1, wherein the transmission characteristic for each partial surface of the sensor chip having different sensitivities is produced as a computer-simulated alternating layer system with different layer thicknesses of TiO_2 and SiO_2 with a tolerance of the layer thicknesses of at most 2%.

3. (Original) The photosensor according to claim 2, wherein an arrangement is provided for linear correction of the measurement values put out by the partial surfaces to compensate for deviations in layer thickness caused by manufacture.

4. (Original) The photosensor according to claim 3, wherein the arrangement for linear correction of the output measurement values involves non-local or global matrixing.

5. (Original) The photosensor according to claim 3, wherein the arrangement for linear correction of the output measurement values involves a local matrixing for the selected color space.

6. (Original) The photosensor according to claim 1, wherein the interference filters are arranged directly on semiconductor diodes of the sensor chip.

7. (Original) The photosensor according to claim 6, wherein the interference filters are arranged directly on silicon diodes of the sensor chip.

8. (Original) The photosensor according to claim 7, wherein the interference filters are arranged on Si diodes which were produced by PIN diode technology specially adapted for the visual spectral region.

9. (Original) The photosensor according to claim 7, wherein the interference filters are arranged on Si diodes which were produced by CMOS technology specially adapted for the visual spectral region.

10. (Original) The photosensor according to claim 6, wherein the interference filters are arranged directly on a sensor chip with germanium diodes.

11. (Original) The photosensor according to claim 6, wherein the interference filters are arranged directly on a sensor chip with diodes based on InGaAs.

12. (Original) The photosensor according to claim 1, wherein the interference filters are arranged over the semiconductor diodes of the sensor chip on a separate glass plate.

13. (Previously Presented) The photosensor according to claim 1, wherein the partial surfaces on the sensor chip which are covered with said interference filters and have different sensitivity are shaped as thirds of a circle area and are arranged around a central point.

14. (Previously Presented) The photosensor according to claim 1, wherein the partial surfaces on the sensor chip which are covered by said interference filters and have different sensitivities are arranged around a central point as sectors of a circle area with different surface contents, wherein the different surface contents are adapted in such a way that a lower base sensitivity of one partial surface which comes about because of limited wavelength transmission of the respective interference filter is compensated by a correspondingly greater surface content of the partial surface of the photosensor.

15. (Previously Presented) The photosensor according to claim 1, wherein the partial surfaces on the sensor chip which have different sensitivities because of said interference filters are arranged around a central point in the shape of rhombuses with a 120-degree angle, so that they form a regular hexagon as a tricolor segment.

16. (Original) The photosensor according to claim 15, wherein the tricolor segments are arranged on the sensor chip so as to be uniformly distributed around a plurality of central points with identical webs, so that the tricolor segments are arranged in a honeycombed manner, wherein partial surfaces having identical spectral response do not share any adjacent lateral edges.